Chapter 18A: Construction—Introduction

A. INTRODUCTION

This chapter summarizes the construction program for the proposed Lambert Houses project and assesses the potential for significant adverse impacts during construction. The city, state, and federal regulations and policies that govern construction are described, followed by the anticipated construction schedule and the types of activities likely to occur during the construction. The types of equipment to be used during construction are discussed, along with the expected number of workers and truck deliveries. Based on this information, an assessment is provided of the potential impacts from construction activities.

As described in Chapter 1, "Project Description," the proposed actions would facilitate the phased demolition of the existing Lambert Houses buildings in the West Farms area of the Bronx, and the redevelopment of the Development Site with a combination of affordable housing, retail, and a possible school. With commencement of construction projected in 2017 and an approximately 13-year construction period, the proposed project is expected to be complete by 2029. During construction of the proposed project, current tenants would be relocated from buildings to be demolished to other locations within the Lambert Houses development. Once relocated, the unoccupied buildings would be demolished and construction of new buildings would proceed. Tenants of the next buildings to be demolished would be relocated within the Lambert Houses Development Site to the newly constructed buildings, and the demolition and new construction process would begin again. This process would be repeated through completion of the project.

B. GOVERNMENTAL COORDINATION AND OVERSIGHT

Construction oversight involves several city, state, and federal agencies. **Table 18-1** lists the primary involved agencies and their areas of responsibility. For projects in New York City, primary construction oversight lies with the New York City Department of Buildings (DOB), which oversees compliance with the New York City Building Code. In addition, DOB enforces safety regulations to protect workers and the general public during construction. The areas of oversight include installation and operation of equipment such as cranes, sidewalk bridges, safety netting, and scaffolding. The New York City Department of Environmental Protection (DEP) enforces the *New York City Noise Control Code*, reviews and approves any needed Remedial Action Plans (RAPs) and associated Construction Health and Safety Plans (CHASPs), and regulates water disposal into the sewer system as well as removal of fuel tanks and abatement of hazardous materials. The New York City Fire Department (FDNY) has primary oversight of compliance with the *New York City Fire Code* and the installation of tanks containing flammable materials. The New York City Department of Transportation (NYCDOT)'s Office of Construction Mitigation and Coordination (OCMC) reviews and approves any traffic lane and sidewalk closures. The Landmarks Preservation Commission (LPC), along with the State Historic Preservation Office (SHPO), approves the historic and

cultural resources analysis the Construction Protection Plan (CPP), and monitoring measures established to prevent damage to historic structures, as needed. The New York City Department of Parks and Recreation (DPR) is responsible for the oversight, enforcement, and permitting of the replacement of street trees that are lost due to construction.

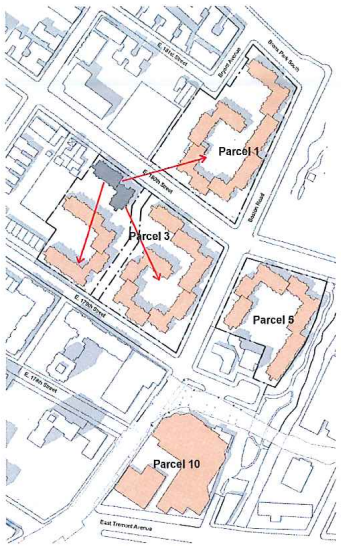
At the state level, the New York State Department of Labor (DOL) licenses asbestos workers. The New York State Department of Environmental Conservation (NYSDEC) regulates disposal of hazardous materials, and construction and operation of bulk petroleum and chemical storage tanks. At the federal level, although the U.S. Environmental Protection Agency (EPA) has wide-ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons, much of its responsibility is delegated to the state level. The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

Table 18A-1
Summary of Primary Agency Construction Oversight

Agency	Areas of Responsibility
New York City	
Department of Buildings	Building Code and site safety
Department of Environmental Protection	Noise Code, RAPs/CHASPs, dewatering, fuel tank removal, hazardous materials abatement
Fire Department	Compliance with Fire Code, fuel tank installation
Department of Transportation	Lane and sidewalk closures
Landmarks Preservation Commission	Archaeological and architectural resources protection
Department of Parks and Recreation	Street trees
New York State	
State Historic Preservation Office	Archaeological and architectural resources protection
Department of Labor	Asbestos Workers
Department of Environmental Conservation	Hazardous materials and fuel/chemical storage tanks
United States	
Environmental Protection Agency	Air emissions, noise, hazardous materials, poisons
Occupational Safety and Health Administration	Worker safety

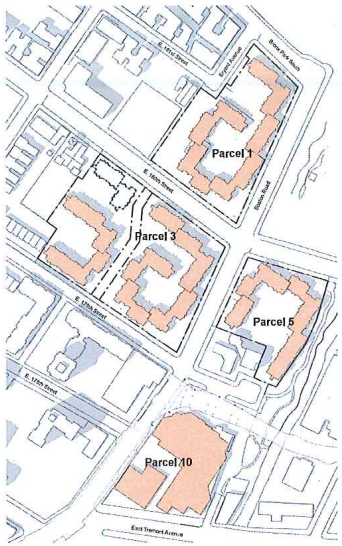
C. CONSTRUCTION PHASING AND SCHEDULE

The proposed project would involve a buildout period of approximately 13 years. **Table 18-2** presents a preliminary schedule of construction for the proposed project as currently envisioned. Construction is anticipated to begin in January 2017 and be complete in September 2029. During construction of the proposed project, current tenants would be relocated from buildings to be demolished to other locations within the Lambert Houses development. Once relocated, the unoccupied buildings would be demolished and construction of new buildings would proceed. Tenants of the next buildings to be demolished would be relocated within the Lambert Houses Development Site to the newly constructed buildings, and the demolition and new construction process would begin again. This process would be repeated through completion of the project (see **Figures 18A-1a through 18A-1c**). As shown in **Table 18-2**, construction activities are divided into five building groups, beginning at Parcel 3 with the construction of Building 3A, followed by activities at Parcel 5 with the construction of Buildings 5A and 5B, Parcel 1 with the construction of Buildings 1A through 1D, Parcel 3 with the construction of 3B through 3F, and finally Building 10 at Parcel 10.



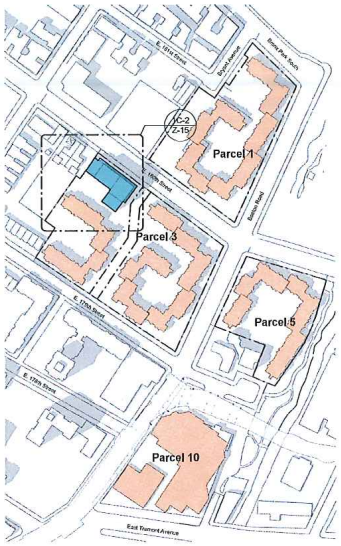
A - Relocate 988 E.180th Street residents to other available units

1 Phase 1A
1" = 200'-0"



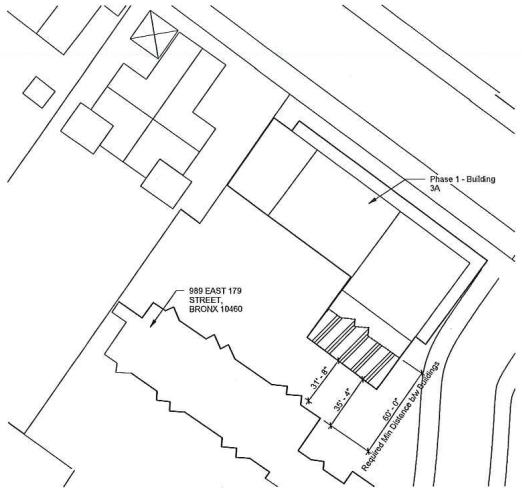
B - Demolish existing 988 building (Demolish approx. 44 units)

1B Phase 1B
1" = 200'-0"



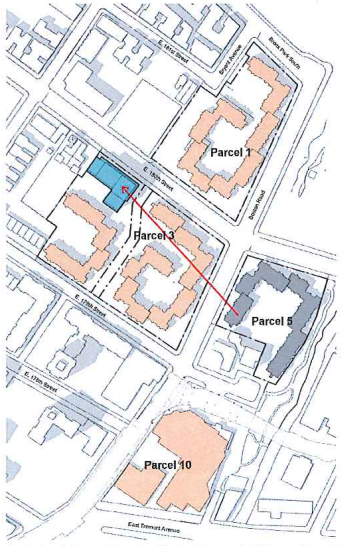
C - Construct new building 3A (+/- 147 dwelling units)

1C Phase 1C
1" = 200'-0"



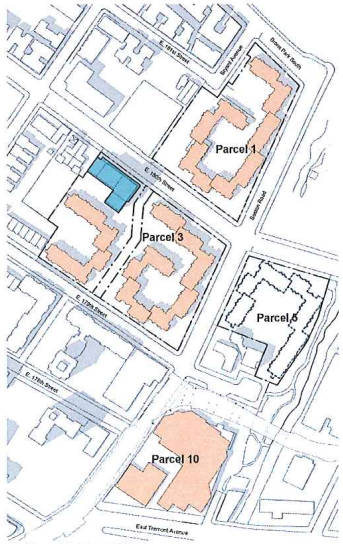
Interim Waiver - Minimum distances between buildings

1C-2 Interim Waiver
1" = 40'-0"



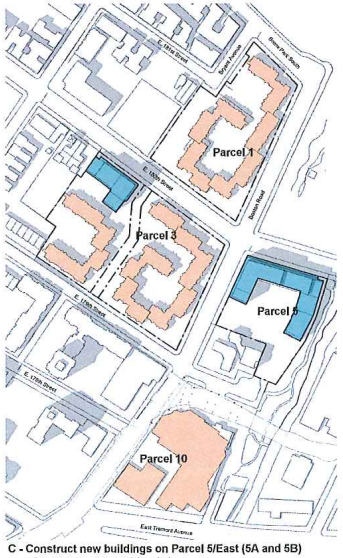
A - Relocate Parcel 5/East residents into new building on Parcel 3 (169 units to approx. 147 units at Parcel 3, assumes some vacancies)

2A Phase 2A
1" = 200'-0"



B - Demolish Parcel 5/East (Demolish 169 units)

2B Phase 2B
1" = 200'-0"



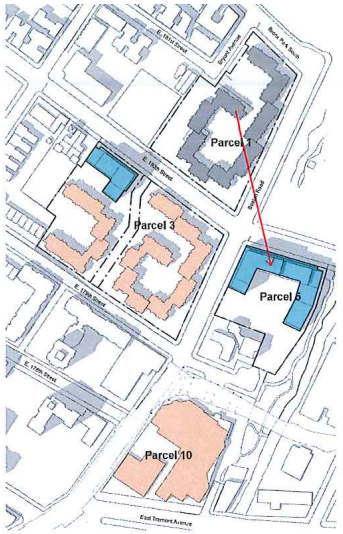
C - Construct new buildings on Parcel 5/East (5A and 5B) (Construct approx. 301 units)

2C Phase 2C
1" = 200'-0"

Source: Dattner Architects

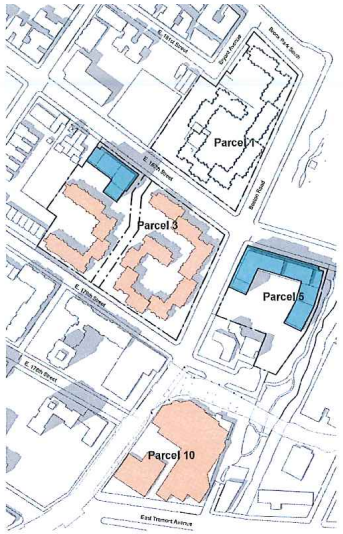
Phasing Diagrams - Phase 1 and 2

Figure 18A-1a



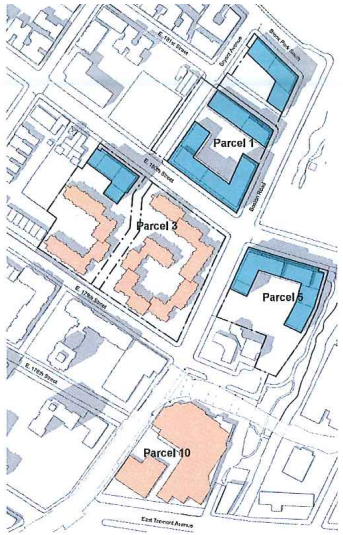
A - Relocate Parcel 1/North residents into new building on Parcel 5
(Relocate 242 units to approx. 301 units on Parcel 5

3A Phase 3A
1" = 200'-0"



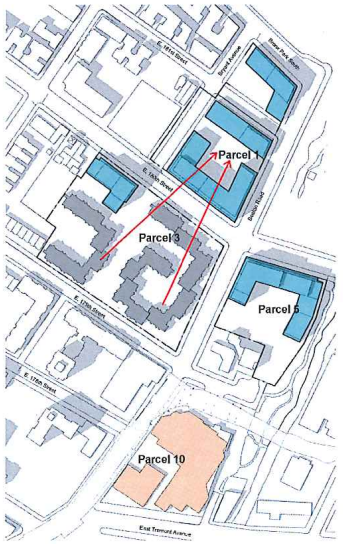
B - Demolish Parcel 1/North
(Demolish 242 units)

3B Phase 3B
1" = 200'-0"



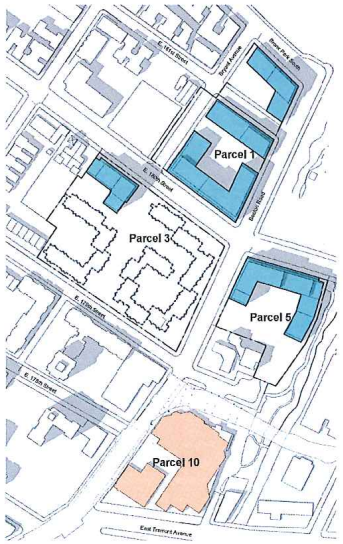
C - Construct new buildings on Parcel 1/North, re-establish Bryant Avenue & E.181st Street as private streets (1A - 1D)
(Construct approx. 494 units)

3C Phase 3C
1" = 200'-0"



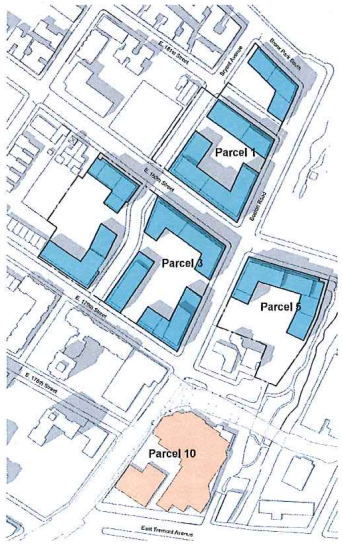
A - Relocate Parcel 3/South residents into new buildings on Parcel 1
(Relocate approx. 281 units to approx. 494 units on Parcel 1)

4A Phase 4A
1" = 200'-0"



B - Demolish Parcel 3/South
(Demolish approx. 281 units)

4B Phase 4B
1" = 200'-0"



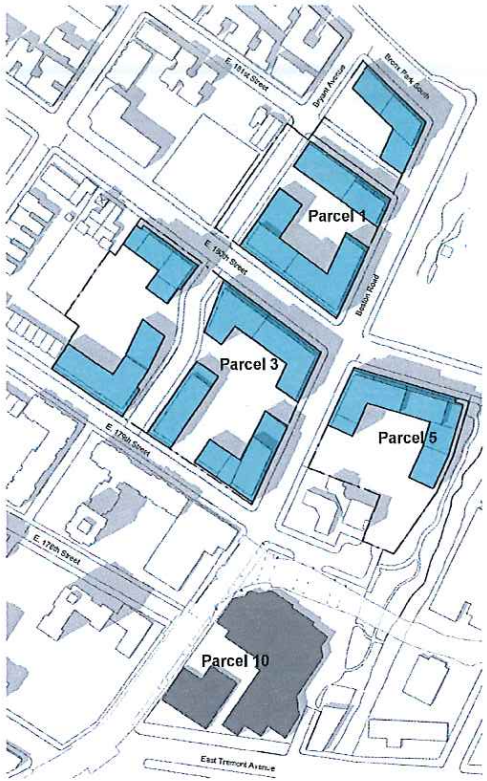
C - Construct new buildings on Parcel 3/South, re-establish Bryant Ave as private street (3B - 3F)
(Construct approx. 590 units)

4C Phase 4C
1" = 200'-0"

Source: Dattner Architects

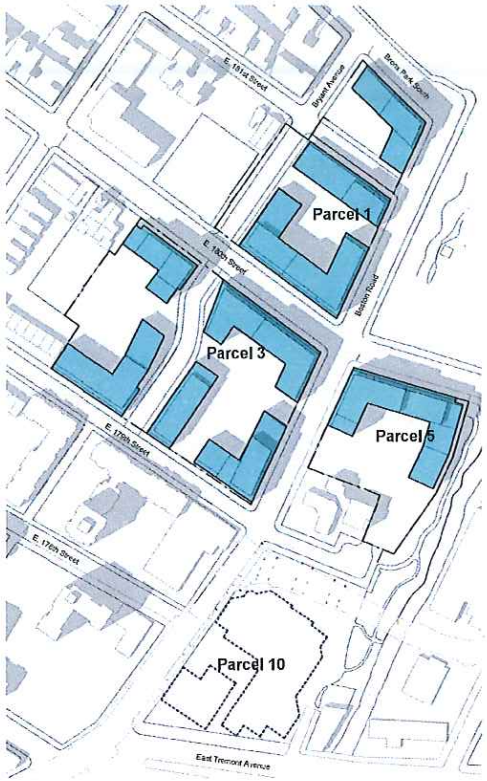
Phasing Diagrams - Phase 3 and 4

Figure 18A-1b



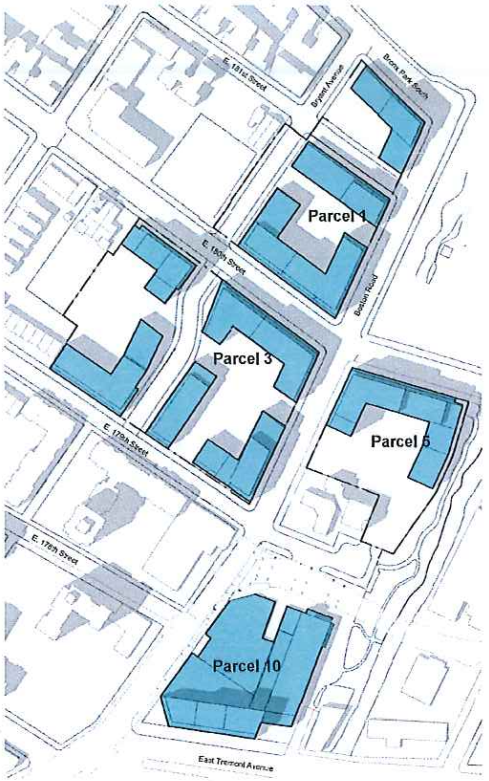
A - Vacate Parcel 10/East
(No existing residential units)

5A Phase 5A
1" = 200'-0"



B - Demolish Parcel 10/East

5B Phase 5B
1" = 200'-0"



C - Construct new parking, retail, and residential buildings on
Parcel 10/East Tremont
(Construct approx. 133 units)

5C Phase 5C
1" = 200'-0"

N

Source: Dattner Architects

Phasing Diagrams - Phase 5

Figure 18A-1c

Table 18A-2
Preliminary Construction Schedule

Building	Activity	Approximate Start Month	Approximate Finish Month	Approximate Duration (months)
3A	Demolition	January 2017	March 2017	3
	Building Construction	April 2017	December 2018	21
	Relocation	January 2019	November 2019	10
5A, 5B	Demolition	December 2019	February 2020	3
	Building Construction	March 2020	November 2021	21
	Relocation	December 2021	September 2022	10
1A, 1B, 1C, and 1D	Demolition	October 2022	December 2022	3
	Building Construction	January 2023	September 2024	21
	Relocation	October 2024	August 2025	10
3B, 3C, 3D, 3E, 3F	Demolition	September 2025	November 2025	3
	Building Construction	December 2025	August 2027	21
10	Demolition	September 2027	November 2027	3
	Building Construction	December 2027	September 2029	21

Source: Phipps Houses

D. CONSTRUCTION DESCRIPTION

This section describes construction activities for the proposed project. The approach and procedures for constructing the proposed building would be typical of the methods used in other building construction projects throughout New York City.

GENERAL CONSTRUCTION PRACTICES

HOURS OF WORK

Construction for the proposed project would be carried out in accordance with New York City laws and regulations, which allow construction activities between 7:00AM and 6:00PM on weekdays. Construction work would occur on weekdays and typically begin at 7:00AM, with most workers arriving between 6:00AM and 7:00AM. Normally work would end at 3:30 PM to 4:00PM, but it can be expected that, in order to complete certain critical tasks (i.e., finishing a concrete pour for a floor deck), the workday may occasionally be extended beyond normal work hours. Any extended workdays would generally last until approximately 6:00 PM and would not include all construction workers on-site, but only those involved in the specific task requiring additional work time.

Weekend work may also be required for certain construction activities such as the erection of the tower crane and to make up for weather delays or other unforeseen circumstances. Weekend work requires a permit from DOB and, in certain instances, approval of a noise mitigation plan from the DEP under the City's Noise Code. The New York City Noise Control Code, as amended in December 2005 and effective July 1, 2007, limits construction (other than special circumstances as described below) to weekdays between the hours of 7 AM and 6 PM, and sets noise limits for certain specific pieces of construction equipment. Construction activities occurring after hours (weekdays between 6 PM and 7 AM and on weekends) may be permitted only to accommodate: (1) emergency conditions; (2) public safety; (3) construction projects by or on behalf of City agencies; (4) construction activities with minimal noise impacts; and (5) undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts, and/or financial considerations. Appropriate work permits from DOB would be

obtained for any necessary work outside of normal construction hours (i.e., weekend work) and no work outside of normal construction hours could be performed until such permits are obtained. The numbers of workers and pieces of equipment in operation for weekend work would be limited to those needed to complete the particular authorized task. Therefore, the level of activity for any weekend work would be less than a normal workday. If it were to become necessary, the weekend workday would typically be on a Saturday.

LANE AND WALKWAY NARROWING AND/OR CLOSURES

As is typical with construction projects in New York City, temporary curb-lane and sidewalk narrowing and/or closures may be required adjacent to the construction area. Maintenance and Protection of Traffic (MPT) plans would be developed for any temporary curb-lane and sidewalk narrowing/closures as required by DOT. Approval of these plans and implementation of the closures would be coordinated with DOT's OCMC.

STAGING AREAS AND PERIMETER SAFETY

Access to the construction area would be controlled. The work areas would be fenced off, and limited access points for construction workers and trucks would be provided. Construction activities would be staged primarily within the Development Site, and/or on parking lanes adjacent to the construction area.

A variety of measures would be employed to ensure public safety during the construction of the proposed project. For example, sidewalk bridges would be erected where necessary to provide overhead protection for pedestrians passing by the construction site. Flaggers would be posted as necessary to control trucks entering and exiting the construction site, to provide guidance to pedestrians, and/or to alert or slow down the traffic. The installation and operation of tower crane(s) would follow stringent DOB requirements to ensure safe operation of the equipment. Safety nettings would be installed on the sides of the new building as the superstructure advances upward to prevent debris from falling to the ground. All DOB safety requirements would be followed and construction activities would be conducted with care so as to minimize the disruption to the community.

RODENT CONTROL

Construction contracts may include provisions for a rodent (i.e., mouse and rat) control program. Before the start of construction, the contractor would survey and bait the appropriate areas and provide for proper site sanitation. During construction, the contractor would carry out a maintenance program, as necessary. Signage would be posted, and coordination would be conducted with appropriate public agencies. Only EPA- and NYSDEC-registered rodenticides would be permitted, and the contractor would be required to implement the rodent control program in a manner that is not hazardous to the general public, domestic animals, and non-target wildlife.

GENERAL CONSTRUCTION ACTIVITIES

As discussed above in "Construction Phasing and Schedule," current tenants would be relocated from buildings to be demolished to other locations within the Lambert Houses development. Once relocated, the unoccupied buildings would be demolished and construction of new buildings would proceed. Tenants of the next buildings to be demolished would be relocated within the Lambert Houses Development Site to the newly constructed buildings, and the

demolition and new construction process would begin again. This process would be repeated through completion of the project.

DEMOLITION

The existing buildings to be demolished would first be abated of asbestos and any other hazardous materials. A New York City-certified asbestos investigator would inspect the building for asbestos-containing materials (ACM), and those materials would be removed by a DOL-licensed asbestos abatement contractor prior to interior demolition. Asbestos abatement is strictly regulated by DEP, DOL, EPA, and OSHA to protect the health and safety of construction workers and nearby residents and workers. Depending on the extent and type of ACMs, these agencies would be notified of the asbestos removal project and may inspect the abatement site to ensure that work is being performed in accordance with applicable regulations. Any activities with the potential to disturb lead-based paint (LBP) would be performed in accordance with the applicable OSHA regulation (including federal OSHA regulation 29 CFR 1926.62—*Lead Exposure in Construction*). In addition, any suspected polychlorinated biphenyl (PCB)-containing equipment (such as fluorescent light ballasts) that would be disturbed would be evaluated prior to disturbance. Unless labeling or test data indicate that the suspected PCB-containing equipment does not contain PCBs, such equipment would be assumed to contain PCBs, and would be removed and disposed of at properly licensed facilities in accordance with all applicable regulatory requirements.

General demolition is the next step, and first any economically salvageable materials are removed. Then the interior of the building is deconstructed to the floor plates and structural columns. Netting around the exterior of the building would be used to prevent materials from falling into public areas. Hand tools and excavators with hoe ram attachment would mainly be used in the demolition of the existing structures and bobcats and front-end loaders would be used to load the debris into dump trucks. The demolition debris would be sorted prior to being disposed at landfills to maximize recycling opportunities. The demolition stage of construction is anticipated to take approximately three months per building group to complete.

BUILDING CONSTRUCTION

Building construction for the proposed project would proceed in several stages: excavation and foundation; superstructure and exteriors; and interiors and finishing. Building construction would begin with the excavation of the soils, any required remediation, and the construction of the foundations. When the below-grade construction is completed, construction of the superstructure (the building's beams, columns, floor decks, and core) of the new building would begin. Next, the exterior of the building would be constructed followed by interiors and finishing. The interiors and finishing work would include the construction of nonstructural building elements such as interior partitions and interior finishes (i.e., flooring, painting, etc.). Interiors and finishing would be the quietest because most of the construction activities would occur within the building that is already enclosed. The excavation and foundation, superstructure and exteriors, and interiors and finishing stages of construction are anticipated to take approximately three months, nine months, and nine months per building group to complete, respectively.

Chapter 18B: Construction—Transportation Impact Assessment

E. INTRODUCTION

The construction transportation analysis assesses the potential for construction activities to result in significant adverse impacts to traffic, parking conditions, and transit and pedestrian facilities. The analysis is based on the peak worker and truck trips during construction of the proposed project, which are developed based on several factors including worker modal splits, vehicle occupancy and trip distribution, truck passenger car equivalents (PCEs), and arrival/departure patterns. For the proposed project, the combined peak-construction, worker-vehicle and truck-trip generation would occur from the second quarter of 2026 to the third quarter of 2026 during the construction of Buildings 3B through 3F.

The following sections evaluate the potential for the proposed project's peak construction worker and truck trips to result in significant adverse impacts to traffic, parking, transit facilities, and pedestrian facilities.

F. TRAFFIC

An evaluation of construction sequencing and worker/truck projections was undertaken to assess potential traffic impacts.

DAILY WORKFORCE AND TRUCK DELIVERIES

Table 18B-1 shows the estimated average daily numbers of workers and deliveries for the proposed project by calendar quarter for the duration of the construction period. The average number of workers throughout the entire construction period would be approximately 105 per day. The peak number of workers by calendar quarter would be approximately 239 per day, and would occur from the second quarter of 2026 to the third quarter of 2026 during the building superstructure and exteriors stage of construction at Parcel 3. For truck trips, the average number of trucks throughout the entire construction period would be approximately 20 per day, and the peak number of deliveries by calendar quarter would occur from the second quarter of 2026 to the third quarter of 2026, with approximately 36 trucks per day during the building superstructure and exteriors stage of construction at Parcel 3. These workforce and truck estimates of construction activities are discussed further below.

Table 18B-1
Average Number of Daily Workers and Trucks by Year and Quarter

Year					2017				2018				2019			
Quarter					1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers					25	~~25~~60	60	60	60	47	47	47	0	0	0	17
Trucks					9	9	9	9	9	9	9	9	0	0	0	6
Year	**2020**				**2021**				**2022**				**2023**			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	~~52~~75	~~76~~122	~~123~~122	~~123~~122	114	~~97~~96	~~97~~96	~~65~~64	0	0	0	85	~~85~~200	~~201~~200	~~201~~200	~~201~~200
Trucks	~~18~~19	~~18~~19	~~18~~19	~~18~~19	~~18~~19	~~18~~19	~~18~~19	12	0	0	0	30	30	30	30	30
Year	**2024**				**2025**				**2026**				**2027**			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	158	158	158	0	0	0	34	~~101~~147	**~~147~~239**	**239**	~~239~~222	~~222~~188	188	188	133	~~23~~33
Trucks	30	30	30	0	0	0	12	36	**36**	**36**	36	36	36	36	27	8
Year	**2028**				**2029**								**Average**		**Peak**	
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th								
Workers	~~33~~54	54	54	50	43	43	~~29~~28	0					~~105~~113		239	
Trucks	8	8	8	8	8	8	5	0					20		36	

Sources: Worker and truck projections were developed based on representative affordable housing developments of similar sizes and uses from prior EIS document (2013 *Halletts Point Rezoning Final Environmental Impact Statement).*

CONSTRUCTION TRIP-GENERATION PROJECTIONS

The average worker and truck trip projections in **Table 18B-1** were further refined to account for worker modal splits and vehicle occupancy, arrival and departure distribution, and truck PCEs.

CONSTRUCTION WORKER MODAL SPLITS AND VEHICLE OCCUPANCY

Based on the latest available U.S. Census data (2000 Census data) for workers in the construction and excavation industry, it is anticipated that 65 percent of construction workers would commute to the Development Site by private autos at an average occupancy of approximately 1.16 persons per vehicle.

PEAK-HOUR, CONSTRUCTION-WORKER VEHICLE AND TRUCK TRIPS

Similar to other construction projects in New York City, most of the construction activities at the Development Site are expected to take place from 7:00 AM to 3:30 PM. While construction truck trips would occur throughout the day (with more trips during the early morning), and most trucks would remain in the area for short durations, construction workers would commute during the hours before and after the work shift. For analysis purposes, each truck delivery was assumed to result in two truck trips during the same hour (one "in" and one "out"), whereas each worker vehicle was assumed to arrive near the work shift start hour and depart near the work shift end hour. Further, in accordance with the 2014 *CEQR Technical Manual*, the traffic analysis assumed that each truck has a PCE of 2.

The estimated daily vehicle trips were distributed throughout the workday based on projected work shift allocations and conventional arrival/departure patterns for construction workers and trucks. For construction workers, the majority (approximately 80 percent) of the arrival and departure trips would take place during the hour before and after each work shift (6:00 to 7:00 AM for arrival and 3:00 to 4:00 PM for departure on a regular day shift). Construction truck deliveries typically peak during the hour before each shift (25 percent), overlapping with construction worker arrival traffic. As shown in **Table 18B-2**, based on these projections, the

maximum construction-related traffic increments would be approximately 143 PCEs between 6:00 AM and 7:00 AM and 111 PCEs between 3:00 PM and 4:00 PM.

Table 18B-2
Peak Construction Vehicle Trip Projections

	Auto Trips			Truck Trips			Total					
	Regular Shift			Regular Shift			Vehicle Trips			PCE Trips		
Hour	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6 AM - 7 AM	**107**	**0**	**107**	**9**	**9**	**18**	**116**	**9**	**125**	**125**	**18**	**143**
7 AM - 8 AM	27	0	27	4	4	8	31	4	35	35	8	43
8 AM - 9 AM	0	0	0	4	4	8	4	4	8	8	8	16
9 AM -10 AM	0	0	0	4	4	8	4	4	8	8	8	16
10 AM -11 AM	0	0	0	4	4	8	4	4	8	8	8	16
11 AM - 12 PM	0	0	0	4	4	8	4	4	8	8	8	16
12 PM - 1 PM	0	0	0	4	4	8	4	4	8	8	8	16
1 PM - 2 PM	0	0	0	1	1	2	1	1	2	2	2	4
2 PM - 3 PM	0	7	7	1	1	2	1	8	9	2	9	11
3 PM - 4 PM	0	107	107	1	1	2	1	108	109	2	109	111
4 PM - 5 PM	0	20	20	0	0	0	0	20	20	0	20	20
Daily Total	134	134	268	36	36	72	170	170	340	206	206	412

Note: Hourly construction worker and truck trips were derived from an estimated quarterly average number of construction workers and truck deliveries per day, with each truck delivery resulting in two daily trips (arrival and departure).

A comparison of the projected traffic levels generated at the construction sites during peak construction and those upon full build-out of the proposed project is summarized in **Table 18B-3.** As presented in **Table 18B-3**, the construction traffic increments would be substantially lower than the operational traffic increments for the full build-out under the proposed project in 2029. Therefore, the potential traffic impacts during peak construction would be within the envelope of significant adverse traffic impacts identified for the With Action condition in Chapter 12, "Transportation." Further, as shown in **Table 18B-1,** all other periods of construction would generate fewer vehicular trips than those projected for the peak construction period. Moreover, as described above in "Lane and Walkway Narrowing and/or Closures," MPT plans would be developed where necessary in coordination with NYCDOT's OCMC to minimize traffic disruption in the surrounding community.

Table 18B-3
Comparison of Construction and Operational Peak Vehicle Trip Generation

Peak Construction Trips in PCEs (Second Quarter of 2026 to Third Quarter of 2026)				2029 Full Build-Out Incremental Operational Trips in PCEs			
Peak Period	In	Out	Total	Peak Period	In	Out	Total
Weekday Arrival Peak Hour (6–7 AM)	125	18	143	Weekday AM Peak Hour (8–9 AM)	111	164	275
Weekday Departure Peak Hour (4–5 PM)	2	109	111	Weekday PM Peak Hour (5–6 PM)	161	133	294

The construction and operational traffic increments summarized above provide an indication that although significant adverse impacts during construction would be likely, the peak hour traffic conditions during peak construction is expected to be more favorable than those identified for the full build-out of proposed project in 2029. As detailed in Chapter 21, "Mitigation," measures to mitigate the operational traffic impacts in 2029 were recommended for implementation at five intersections during one or more of the weekday analysis peak hours. These measures would encompass primarily signal timing changes, all of which could be implemented early at the

discretion of NYCDOT to address actual conditions experienced at that time. However, as with the With Action condition, there could also be significant adverse traffic impacts at the intersections of East Tremont Avenue and Boston Road/West Farms Road, East Tremont Avenue and Devoe Avenue/East 177th Street, East 177th Street and Sheridan Expressway, East 178th Street and Boston Road, and East 180th Street and Boston Road that could not be fully mitigated during one or more analysis peak hours.

G. PARKING

As described above, the peak number of workers would be 239 per day, and would occur from the second quarter of 2026 to the third quarter of 2026 during the building superstructure and exteriors stage of construction at Parcel 3. Based on the latest available U.S. Census data (2000 Census data) for workers in the construction and excavation industry, it is anticipated that 65 percent of construction workers would commute to the Development Site by private autos at an average occupancy of approximately 1.16 persons per vehicle. The anticipated construction activities are therefore projected to generate a maximum parking demand of 134 parking spaces.

As described in Chapter 12, "Transportation," an estimated 155 and 172 public parking spaces are currently available within a ¼-mile radius of the Development Site during the overnight and morning parking utilization periods, respectively. However, additional parking demand is expected to be generated from background growth, discrete No Build projects, and incremental parking demand generated by the re-tenanting of the Development Site parcels. Although the parking demand associated with construction workers commuting via auto would be temporary in nature, it can be expected that a parking shortfall may still occur within ¼-mile of the Development Site and that a maximum parking demand of 134 parking spaces for construction workers would be partially accommodated by the off-street spaces and parking facilities available within a ¼-mile radius of the Development Site. However, as with the analysis results presented for the With Action operational condition, based on the proximity of multiple transit options to the proposed project, as well as that most of the excess demand is expected to be accommodated by parking facilities outside of the ¼-mile parking study area radius, the potential parking shortfall during construction would also not constitute a significant adverse parking impact.

H. TRANSIT

Based on the latest available 2000 U.S. Census data for workers in the construction and excavation industry, it is anticipated that approximately 35 percent of construction workers would commute to the Development Site via transit. The study area is served by several mass transit lines, including two subway lines (No. 2 and 5 trains) and multiple local bus routes (Bx9, Bx21, Bx36, Bx40, Bx42, and Q44). During the peak-construction worker shift (239 average daily construction workers in the 7:00 AM to 4:00 PM shift during), approximately 84 workers would travel by transit. With 80 percent of these workers arriving or departing during the construction peak hours, the estimated number of peak-hour transit trips would be 67, well below the *CEQR Technical Manual* 200-transit-trip analysis threshold. Therefore, construction of the proposed project would not result in any significant adverse construction transit impacts, and no further analysis is required.

I. PEDESTRIANS

As summarized above, 239 average daily construction workers are projected in the 7:00 AM to 4:00 PM shift during peak construction. With 80 percent of these workers arriving or departing during the construction peak hours (6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM), the corresponding numbers of peak-hour pedestrian trips traversing the area's sidewalks, corners, and crosswalks would be approximately 191. This number is below the *CEQR Technical Manual* 200-pedestrian-trip analysis threshold for detailed analysis. Therefore, construction of the proposed project would not result in any significant adverse pedestrian impacts, and no further analysis is required.

J. CONCLUSION

Based on the construction trip projections and comparison with operational analysis results, construction of the proposed project is expected to result in significant adverse traffic impacts and the potential for a parking shortfall during peak construction, as summarized below. However, no significant adverse impacts to transit or pedestrian conditions are anticipated due to construction.

TRAFFIC

During peak construction, the project-generated trips would be less than what would be realized upon the full build-out of the proposed project in 2029. Therefore, the potential traffic impacts during peak construction would be within the envelope of significant adverse traffic impacts identified for the With Action condition in Chapter 12, "Transportation." As detailed in Chapter 21, "Mitigation," measures to mitigate the operational traffic impacts were recommended for implementation at five~~seven~~ intersections during one or more of the weekday analysis peak hours. These measures would encompass primarily signal timing changes, all of which could be implemented early at the discretion of NYCDOT to address actual conditions experienced at that time. However, as with the With Action condition, there could also be significant adverse traffic impacts at the intersections of East Tremont Avenue and Boston Road/West Farms Road, East Tremont Avenue and Devoe Avenue/East 177th Street, East 177th Street and Sheridan Expressway, East 178th Street and Boston Road, and East 180th Street and Boston Road that could not be fully mitigated during one or more analysis peak hours.

PARKING

The anticipated construction activities are projected to generate a maximum parking demand of 134 spaces during peak construction. As described in Chapter 12, "Transportation," an estimated 155 and 172 public parking spaces are currently available within a ¼-mile radius of the Development Site during the overnight and morning parking utilization periods, respectively. However, additional parking demand is expected to be generated from background growth, discrete No Build projects, and incremental parking demand generated by the re-tenanting of the Development Site parcels. Although the parking demand associated with construction workers commuting via auto would be temporary in nature, it can be expected that a parking shortfall may still occur within ¼-mile of the Development Site. However, as with the analysis results presented for the With Action operational condition, based on the proximity of multiple transit options to the proposed project, as well as that most of the excess demand is expected to be accommodated by parking facilities outside of the ¼-mile parking study area radius, the

potential parking shortfall during construction would also not constitute a significant adverse parking impact.

TRANSIT

The estimated number of total peak hour transit trips would be 67, well below the *CEQR Technical Manual* 200-transit-trip analysis threshold. Therefore, construction of the proposed project would not result in any significant adverse construction transit impacts, and no further analysis is required.

PEDESTRIANS

The estimated number of total peak hour pedestrian trips traversing the area's sidewalks, corners, and crosswalks would be up to 191 during peak construction and below the *CEQR Technical Manual* 200-pedestrian-trip analysis threshold for detailed analysis. Therefore, construction of the proposed project would not result in any significant adverse pedestrian impacts, and no further analysis is required.

K. INTRODUCTION

Emissions from on-site construction equipment and on-road construction-related vehicles, as well as dust generating construction activities, have the potential to affect air quality. In general, much of the heavy equipment used in construction has diesel-powered engines and produces relatively high levels of nitrogen oxides (NO_x) and particulate matter (PM). Fugitive dust generated by construction activities also contains particulate matter. Finally, gasoline engines produce relatively high levels of carbon monoxide (CO). As a result, the primary air pollutants of concern for construction activities include nitrogen dioxide (NO_2), particulate matter with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}), particulate matter with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$), and CO.

L. REGULATORY CONTEXT

The conformity requirements of the Clean Air Act (CAA) and regulations promulgated thereunder (conformity requirements) limit the ability of federal agencies to assist, fund, permit, and approve projects that do not conform to the applicable State Implementation Plan (SIP). When subject to this regulation, the lead agency is responsible for demonstrating conformity for its proposed action. Conformity of federal actions other than those related to transportation plans, programs, and projects which are developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.) must be addressed according to the requirements of 40 CFR Part 93 Subpart B (federal general conformity regulations).

The project area is currently classified by EPA to be moderate non-attainment for ozone, and attainment/maintenance for CO, PM_{10}, and $PM_{2.5}$. The general conformity requirements apply to those federal actions in non-attainment or maintenance areas where the action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants or their precursor pollutants at rates equal to or exceeding the prescribed rates or representing 10 percent or more of a non-attainment or maintenance area's total emissions inventory for that pollutant. In the case of New York City, the prescribed annual rates are 50 tons of volatile organic compounds (VOCs) and 100 tons of nitrogen dioxides (NO_x -ozone precursors, ozone non-attainment area in transport region), 100 tons of CO (CO maintenance area), and 100 tons of $PM_{2.5}$, sulfur dioxide (SO_2), or NO_x ($PM_{2.5}$ and precursors in $PM_{2.5}$ non-attainment area), and in Manhattan only, 100 tons of PM_{10} (moderate PM_{10} non-attainment area). Since the proposed project may request HOME funds or other funding from the U.S. Department of Housing and Urban Development (HUD), general conformity regulations would apply.

While the proposed project construction would likely be included in the growth in construction emissions budgets assumed in the SIP, since the project is not "specifically identified" in the SIP (no project is) as defined in the regulations, this analysis conservatively assumes that the emissions are not already included in the SIP (in which case they would conform by definition).

M. OVERVIEW OF AIR QUALITY EMISSIONS DURING PROJECT CONSTRUCTION

Construction of the proposed buildings, as is the case with any construction project, may be disruptive to the surrounding area. Nearby sensitive receptor locations include residences within and in proximity of the Development Site, schools, and open spaces. The approach and procedures for constructing the proposed buildings would be typical of the methods utilized in other building construction projects throughout New York City and therefore would not be considered out of the ordinary in terms of intensity. The air pollutant emission levels associated with construction of the proposed project are typical of ground-up building construction in New York City that would require demolition, excavation, and foundation construction (where large equipment such as excavators and loaders would be employed).

While the overall construction period of the proposed project is anticipated to be approximately 13 years, on-site construction activities for each building group is expected to last approximately two years (see **Table 18-2**). Construction activities associated with the proposed project would move from one parcel to another such that no portion of the adjacent community would be subject to the full effects of the construction of the proposed project for the entire construction period. Furthermore, the construction duration for the most intense construction activities in terms of air pollutant emissions (demolition, excavation, and foundation stages, where the largest number of large non-road diesel engines would be employed) is anticipated to occur for only a portion of the duration—6 months per building group. The other stages of construction, including superstructure and exteriors and interiors and finishing work, would result in much lower air emissions since they would require fewer pieces of heavy duty diesel equipment. The equipment required for the latter stages of construction would generally have small engines and would be dispersed vertically throughout the building, resulting in low concentration increments in adjacent areas. In addition, the latter stages of construction would not involve soil disturbance activities and therefore would result in significantly lower dust emissions. Furthermore, most of the interiors and finishing construction activities associated with the proposed project would occur within the project building that is already enclosed and therefore construction sources would be better shielded from nearby sensitive receptors.

CONFORMITY WITH STATE IMPLEMENTATION PLANS

In order to assess the regional emissions for general conformity, emission factors for PM_{10}, $PM_{2.5}$, NO_x, and CO from on-site construction engines were developed using the latest USEPA NONROAD Emission Model (NONROAD2008a). The model is based on source inventory data accumulated for specific categories of non-road equipment. The emission factors for each type of equipment, with the exception of trucks, were determined from the output files for the NONROAD model (i.e., calculated from regional emissions estimates). Tailpipe emission rates from heavy trucks on-site (e.g., dump trucks, concrete trucks) were developed using the most recent version of the EPA Mobile Source Emission Simulator (MOVES2014a) as referenced in the *CEQR Technical Manual*. This emissions model is capable of calculating engine emission factors for various vehicle types, based on the fuel type (gasoline, diesel, or natural gas), meteorological conditions, vehicle speeds, vehicle age, roadway types, number of starts per day, engine soak time, and various other factors that influence emissions, such as inspection maintenance programs. The inputs and use of MOVES incorporate the most current guidance available from NYSDEC. For analysis purposes, it was assumed that the concrete trucks would

operate for 60 minutes per hour and heavy trucks, such as dump trucks and tractors would have a maximum of a three-minute idle time.

Annual construction activity and on-road emissions over the scheduled duration (2017 through 2029) are presented in **Table 1**. The pollutant emissions associated with the project's construction would not exceed any of the *de minimis* criteria. Therefore, the project would conform to the SIP and does not require a full conformity determination.

Table 18C-1
Emissions from Construction Activities (ton/yr)

	$PM_{2.5}$	PM_{10}	NO_x	CO
De Minimis Criteria	100	100	100	100
2017	0.24	0.25	3.5	3.0
2018	0.21	0.23	2.9	2.0
2019	0.04	0.04	0.7	0.3
2020	0.35	0.36	5.3	5.8
2021	0.26	0.27	3.6	2.8
2022	0.13	0.13	2.2	0.9
2023	0.46	0.48	6.3	**11.1**
2024	0.31	0.33	3.9	2.6
2025	0.18	0.19	2.8	2.1
2026	**0.53**	**0.55**	**6.9**	10.4
2027	0.37	0.38	4.7	3.2
2028	0.12	0.13	1.5	2.7
2029	0.07	0.08	0.9	0.6

Note:
Emissions presented in **bold** represent the highest annual emissions.

N. EMISSIONS REDUCTION MEASURES

Construction activity in general has the potential to adversely affect air quality as a result of diesel emissions. Measures would be taken to reduce pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes. These include dust suppression measures and idling restrictions for on-road vehicles:

- *Dust Control Measures.* To minimize fugitive dust emissions from construction activities, a fugitive dust control plan would be implemented during construction of the proposed project. For example, all trucks hauling loose material would be equipped with tight-fitting tailgates and their loads securely covered prior to leaving the Development Site; water sprays would be used for all demolition, excavation, and transfer of soils to ensure that materials would be dampened as necessary to avoid the suspension of dust into the air. Loose materials would be watered, stabilized with chemical suppressing agent, or covered. All measures required by the portion of the *New York City Air Pollution Control Code* regulating construction-related dust emissions would be implemented.
- *Idling Restriction.* In addition to adhering to the local law restricting unnecessary idling on roadways, on-site vehicle idle time will also be restricted to three minutes for all equipment

and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or otherwise required for the proper operation of the engine.

Additional emissions reduction measures are available to minimize air pollutant emissions during construction, including the use of newer construction equipment that would at a minimum meet U.S. Environmental Protection Agency (EPA) Tier 3 emissions standards[1], and the use of best available tailpipe technology (i.e., diesel particle filters [DPF]) to reduce diesel particulate matter emissions. These measures are commonly used in the New York City construction industry today and it is expected that these emissions control measures would likely be implemented during construction of the proposed project to the extent practicable and feasible. Regardless, since construction of the proposed project would occur over an approximately 13-year period, there would be an increasing percentage of in-use newer and cleaner vehicles and engines for construction in future years, resulting in greatly reduced air pollutant emissions related to construction activities.

O. CONCLUSION

The local air quality effects would be temporary and would only occur during the construction period. Furthermore, construction activities associated with the proposed project would move from one parcel to another such that no portion of the adjacent community would be subject to the full effects of the construction of the proposed project for the entire construction period. The air pollutant emission levels associated with construction of the proposed project would not be considered out of the ordinary in terms of intensity and are typical of ground-up building construction in New York City. Measures would be taken to reduce pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes. In addition, there would be an increasing percentage of in-use newer and cleaner vehicles and engines for construction in future years, resulting in greatly reduced air pollutant emissions related to construction activities. Therefore, based on the information presented above, construction of the proposed project would not result in any significant adverse air quality impacts.

[1] EPA's Tier 1 through 4 standards for nonroad engines regulate the emission of criteria pollutants from new engines, including PM, CO, NO_x, and hydrocarbons (HC). Tier 3 NO_x emissions range from 40 to 60 percent lower than Tier 1 emissions and considerably lower than uncontrolled engines.

P. INTRODUCTION

This section provides an analysis of the potential for construction of the proposed project to result in significant adverse noise impacts. As described in Chapter 18A, "Construction—Introduction," noise from construction activities and some construction equipment is regulated by the *New York City Noise Control Code* and by EPA. The *New York City Noise Control Code* requires the adoption and implementation of a noise mitigation plan for construction sites, limits construction (absent special approvals) to weekdays between the hours of 7:00 AM and 6:00 PM, and sets noise limits for certain specific pieces of construction equipment. As described in more detail in the following sections, potential impacts on community noise levels during construction of the proposed project could result from operation of construction equipment and from construction and delivery vehicles traveling to and from the Development Site. Noise levels caused by construction activities vary widely and depend on the stage of construction and the location of the construction relative to sensitive receptor locations.

Q. CONSTRUCTION NOISE ANALYSIS FUNDAMENTALS

Construction activities result in increased noise levels as a result of: (1) the operation of construction equipment on-site; and (2) the movement of construction-related vehicles (i.e., worker trips, and material and equipment trips) on the roadways to and from the construction site.

Noise from the on-site operation of construction equipment at a specific receptor location near a construction site is generally calculated by computing the sum of the noise produced by all pieces of equipment operating at the construction site. For each piece of equipment, the noise level at a receptor location is a function of the following:

- The noise emission level of the equipment (see **Table 18D-1** for the noise levels for typical construction equipment);
- A usage factor, which accounts for the percentage of time the equipment is operating at full power;
- The distance between the piece of equipment and the receptor;
- Topography and ground effects; and
- Shielding.

Similarly, noise levels due to construction-related traffic are a function of the following:

- The noise emission levels of the type of vehicle (e.g., auto, light-duty truck, heavy-duty truck, bus, etc.);
- Volume of vehicular traffic on each roadway segment;
- Vehicular speed;

- The distance between the roadway and the receptor;
- Topography and ground effects; and
- Shielding.

Table 18D-1
Typical Construction Equipment Noise Emission Levels (dBA)

Equipment List	NYCDEP Mandated Noise Level at 50 feet[1]
Backhoe/Loader	80
Bobcat	85
Compressor	80
Concrete Pump	82
Concrete Truck	85
Cranes (Mobile)	85
Cranes (Tower)	85
Delivery Truck	84
Dump Truck	84
Excavator	85
Generator	82
Hoe Ram	90
Hoist	75
Impact Wrench	85
Jack Hammer	85
Pile Driving Rig (Impact)	95
Water Pump	77

Note:
[1] Citywide Construction Noise Mitigation, Chapter 28, Department of Environmental Protection of New York City, 2007. Sources: Table 22-1, Noise Emission Reference Levels (A-weighted decibels with RMS "slow" time constant), Chapter 22, 2014 CEQR Technical Manual. Transit Noise and Vibration Impact Assessment, Federal Transportation Administration (FTA), May 2006.

R. CONSTRUCTION NOISE IMPACT CRITERIA

The *CEQR Technical Manual* breaks construction duration into "short-term" and "long-term," and states that assessment of construction noise is not likely to result in an impact unless it "affects a sensitive receptor over a long period of time." Consequently, in evaluating potential construction noise impacts, a construction noise analysis considers both the potential for construction of a project to create high noise levels (the "intensity") and whether construction noise would occur for an extended period of time (the "duration").

The *CEQR Technical Manual* states that the following impact criteria, using the No-Action noise level as the baseline, should be used for assessing construction impacts[2]:

- If the No-Action noise level is less than 60 dBA $L_{eq(1)}$, a 5 dBA $L_{eq(1)}$ or greater increase would be considered significant.
- If the No-Action noise level is between 60 dBA $L_{eq(1)}$ and 62 dBA $L_{eq(1)}$, a resultant $L_{eq(1)}$ of 65 dBA or greater would be considered a significant increase.

[2] These impact criteria are specified in section 410 of the *CEQR Technical Manual* Chapter 19, "Noise" for evaluation of operational-period mobile sources.

- If the No-Action noise level is equal to or greater than 62 dBA $L_{eq(1)}$, or if the analysis period is a nighttime period (defined in the *CEQR* criteria as being between 10:00 PM and 7:00 AM), the incremental significant impact threshold would be 3 dBA $L_{eq(1)}$.

S. CONSTRUCTION NOISE ANALYSIS

METHODOLOGY

The construction noise analysis consists of the following:

- Identification of sensitive noise receptor locations near the Development Site.[3]
- Identification of noise reduction measures that would be employed during construction of the proposed project.
- Consideration of potential noise impacts from mobile sources.
- Analysis of potential noise impacts from operation of construction equipment in the Development Site over the build out of the proposed project. Consistent with the noise impact criteria discussed above, the analysis looks first at the *intensity* of noise levels during construction, then assesses the potential *duration* of those noise levels, and finally makes a determination of the potential for impact.
- Analysis of potential noise impacts from operation of construction equipment on new Lambert Houses buildings after they are constructed and occupied.

NOISE RECEPTOR LOCATIONS

The area immediately surrounding the Development Site consists predominantly of residential, open space, institutional, and commercial uses. As shown in **Figure 18D-1**, the following are the noise receptors closest to the areas of proposed construction[4]:

- Bronx Park South and East 181st Street Residences. Residences along Bronx Park South and East 181st Street east of Vyse Avenue on Blocks 3133 and 3134, the nearest of which are approximately 50 feet west of the proposed construction sites, are the receptor locations closest to buildings 1A and 1B.
- New Tabernacle Baptist Church. The New Tabernacle Baptist Church represents the receptor most likely to be affected by noise associated with construction of buildings 1C and 1D, as well as having the potential to be affected by noise associated with the construction of buildings 1A and 1B.
- East 180th Street Residences. Residences along both the north and south sides of East 180th Street east of Vyse Avenue on Blocks 3132 and 3133 are located within approximately 125 feet of building 3A.

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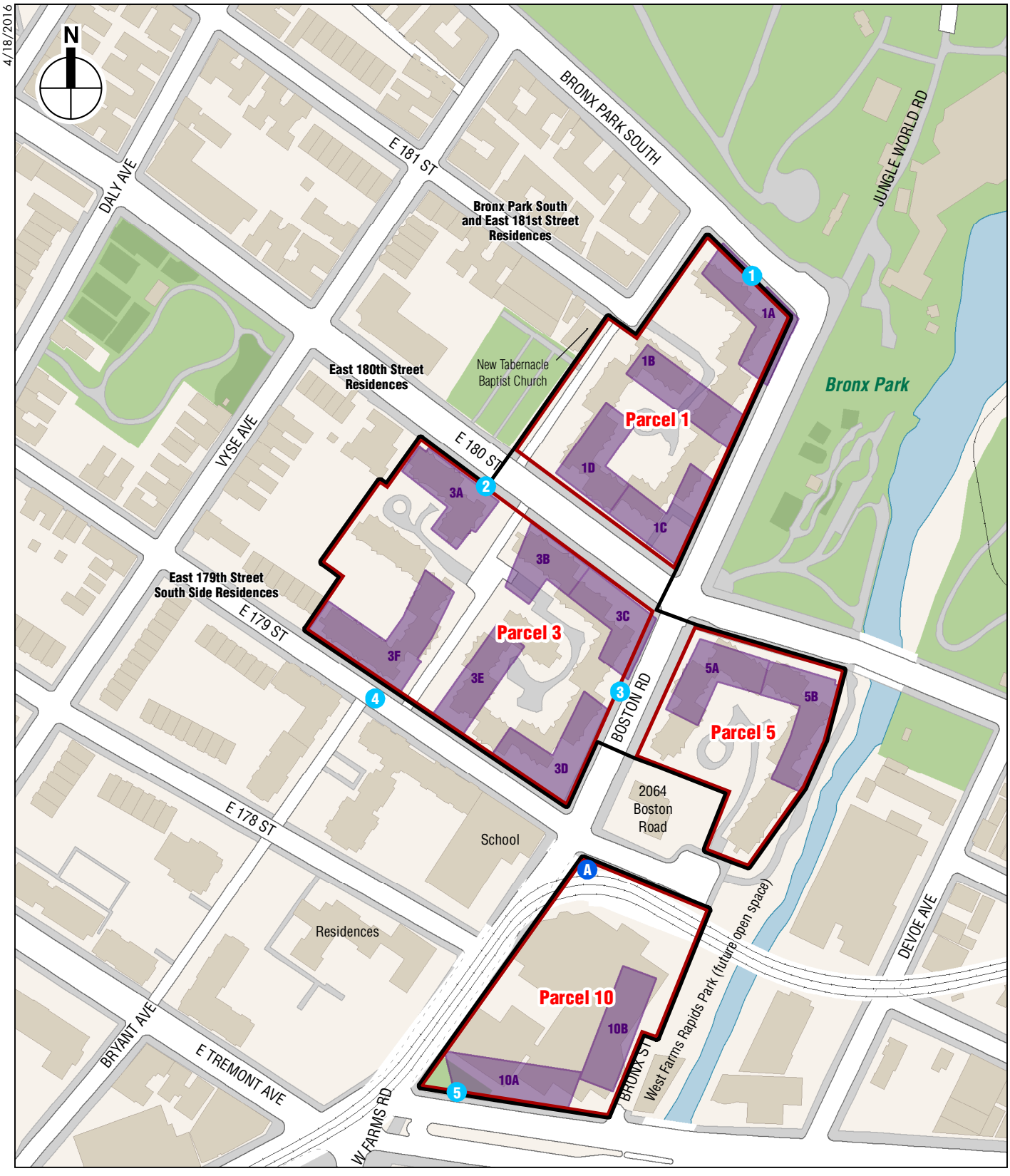
[3] A sensitive receptor location is an area where human activity may be adversely affected by elevated noise levels, including residences, parks, churches, etc.

[4] The Beck Memorial Presbyterian Church is approximately 20 feet west of where building 3A would be constructed. However, site visits found the church to be boarded up with plywood and locked. Additional research found that its phone number was out of service and that it has been boarded up and locked for at least four years. Given that it appears to be abandoned, with no available information regarding plans to re-open, this resource was not included in the analysis.



PHIPPS LAMBERT HOUSES

Noise Receptor Locations

Figure 18D-1

- East 179th Street North Side Residences. Residences along the north side of East 179th Street east of Vyse Avenue (on Block 3132) could be affected by noise associated with construction of buildings 3B, 3C, 3D, 3E, and 3F. The closest of these residences is approximately 10 feet west of the Development Site.
- East 179th Street South Side Residences. Residences along the south side of East 179th Street east of Vyse Avenue on Blocks 3131 and 3136 would be across the street from buildings 3D, 3E, and 3F, approximately 65 feet to the south.
- 2064 Boston Road. This site, on the northeast corner of Boston Road and East 179th Street, is located approximately 50 feet south of building 5A (and 5B) and approximately 100 feet away from both building 3D and Parcel 10.
- Bronx Park. Bronx Park is directly adjacent to buildings 1A, 1B, 1C, 5A, and 5B, at a distance of approximately 90 feet from each. Noise from construction on Parcel 3 could also affect Bronx Park.
- West Farms Rapids Park. West Farms Rapids Park is located to the east of Parcels 5 and 10 with the nearest portion of the Park located approximately 10 feet east of the proposed building 5B construction site and approximately 60 feet east of the proposed Parcel 10 School construction site. The Park is a future segment of the Bronx River Greenway, and is not yet publicly-accessible.
- Directly across Boston Road from Parcel 10 are a school on Block 3136 and residences on Block 3130, both approximately 100 feet west of the parcel.

NOISE REDUCTION MEASURES

Construction of the proposed project would follow the requirements of the *New York City Noise Control Code* for construction noise control measures. Specific noise control measures would be described in a noise mitigation plan required under the *New York City Noise Code*. These measures would include a variety of source and path controls.

In terms of source controls (i.e., reducing noise levels at the source or during the most sensitive time periods), the following measures would be implemented in accordance with the New York City Noise Code:

- Equipment that meets the sound level standards specified in Subchapter 5 of the *New York City Noise Control Code* would be used from the start of construction.
- As early in the construction period as logistics would allow, diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as pumps, compressors, and hoists (i.e., early electrification) to the extent feasible and practicable.
- Where feasible and practical, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than three minutes at the construction site based upon New York City Local Law.
- Contractors and subcontractors would be required to properly maintain their equipment and mufflers.

In terms of path controls (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors), the following measures for construction would be implemented to the extent feasible and practical:

- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations;
- Noise barriers would be utilized to provide shielding (i.e., the construction sites would have a minimum 12-foot site perimeter barrier);
- Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents, where feasible) would be used for certain dominant noise equipment to the extent feasible and practical (e.g., tower crane). The details for construction of portable noise barriers, enclosures, etc. are based upon DEP Citywide Construction Noise Mitigation.

MOBILE SOURCE CONSTRUCTION NOISE ANALYSIS

Throughout the construction period, vehicles (construction-related trucks and vehicles driven by workers) would travel near the Development Site. Most of these vehicles are expected to use Boston Road or East 180th Street, which are already heavily trafficked roadways. As described in Chapter 18B, "Construction—Transportation Impact Assessment," the amount of traffic generated by the construction of the proposed buildings would be low compared with existing traffic volumes on major feeder streets in the neighborhood. In addition, the construction-related vehicles would be distributed amongst the different routes to and from the Development Site. Accordingly, construction-generated traffic on roadways to and from the Development Site would not result in significant adverse construction noise impacts.

ON-SITE CONSTRUCTION NOISE ANALYSIS

As discussed above, the on-site construction noise analysis looks first at the intensity of noise levels during construction, then assesses the potential duration of those noise levels, and finally makes a determination of the potential for impact.

OVERVIEW OF CONSTRUCTION ACTIVITIES

While the overall construction period of the proposed project is anticipated to be approximately 13 years, on-site construction activities for each building group is expected to last approximately two years (see **Table 18A-2**). The noisiest construction activities (demolition, excavation, and foundation work when dominant noise equipment such as hoe rams and pile drivers are used on the construction site) are anticipated to occur for only a portion of the duration—6 months per building group. Superstructure and exteriors work, which would be expected to last approximately 9 months per building group, would require less heavy construction equipment as compared to the demolition, excavation and foundation work; construction equipment with higher noise levels such as hoe rams, pile drivers, excavators, etc. would not be used during the superstructure and exteriors stages of construction.

INTENSITY OF CONSTRUCTION NOISE FROM ON-SITE SOURCES

With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels during construction would be expected to be approximately in the mid 80s dBA at 10 to 20 feet

from the construction site boundary[5] or the mid to high-70s dBA at 50 to 100 feet from the construction site boundary. These maximum noise levels would occur during the loudest periods of construction, which would be rock removal or pile driving where necessary. Noise levels resulting from construction activity were projected at receptors throughout the study area based on distance and shielding provided by existing buildings or project buildings already constructed. Receptors that are located more than 200 feet away from the construction sites with no obstructing buildings or more than 150 feet away with obstructing buildings, would experience construction noise levels no higher than the low 60s dBA, which is lower than the measured existing noise levels throughout the study area. Consequently, receptors outside of these distances would not have the potential to experience significant adverse construction noise impacts. Noise receptors closer to the construction sites are discussed further below.

Bronx Park South and East 181st Street Residences

The residences along Bronx Park South and East 181st Street east of Vyse Avenue on Blocks 3133 and 3134 represent the sensitive receptor locations most likely to experience increased noise levels resulting from construction of buildings 1A and 1B. Measured existing noise levels near these locations were in the mid 60s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels at these residences would be in approximately the mid 70s dBA during the loudest periods of demolition, excavation, and foundation work at buildings 1A and 1B. Consequently, at these residential buildings, the maximum noise levels predicted to be generated by on-site construction activities at buildings 1A and 1B would be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria during certain portions of the construction period. These receptors are discussed further in the *Duration of Construction Noise from On-Site Sources* section below.

New Tabernacle Baptist Church

The New Tabernacle Baptist Church represents the sensitive receptor location most likely to experience increased noise levels resulting from construction on the proposed building 1C and 1D construction sites. Measured existing noise levels near this location were in the mid 60s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels at this receptor would be in approximately the mid 70s dBA during the loudest periods of demolition, excavation, and foundation work at buildings 1C and 1D. Due to the proximity and clear line of sight of the New Tabernacle Baptist Church to the building 1A and 1B construction sites, maximum $L_{eq(1)}$ noise levels at these residences would be in approximately the mid 70s dBA during the loudest periods of demolition, excavation, and foundation work at buildings 1A and 1B as well. Consequently, at this receptor, the maximum noise levels predicted to be generated by on-site construction activities at buildings 1A, 1B, 1C, and 1D would be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria during certain portions of the construction period. However, noise levels in the mid 70s dBA, as would be experienced at this location resulting from on-site construction activities at buildings 1A, 1B, 1C, and 1D, are comparable to existing noise levels measured in this neighborhood along active

[5] Based on detailed noise analyses prepared for several large-scale construction projects with comparable noise-control measure commitments, including Seward Park (*CEQR* No. 11DME012M) and Halletts Point (*CEQR* No. 09DCP084Q).

roadways, and are typical for noise levels in many areas of the Bronx. This receptor is discussed further in the *Duration of Construction Noise from On-Site Sources* section below.

East 180th Street Residences

The residences along the north and south sides of East 180th Street east of Vyse Avenue on Blocks 3132 and Block 3133 are the receptors closest to the building 3A construction site. Measured existing noise levels near these locations were in the low 70s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels would be in approximately the mid 60s dBA during the loudest periods of demolition, excavation, and foundation work at building 3A. Consequently, at these residential buildings, the maximum noise levels predicted to be generated by on-site construction activities at building 3A would not be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria. These receptors are not discussed further.

East 179th Street North Side Residences

The residences along East 179th Street east of Vyse Avenue on Block 3132 represent the sensitive receptor locations most likely to experience increased noise levels resulting from construction of building 3F. Measured existing noise levels near these locations were in the mid to high 60s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels at these residences would be in approximately the mid 80s dBA during the loudest periods of demolition, excavation, and foundation work at building 3F, which would include rock excavation and/or pile driving to the extent that these activities would be necessary. Consequently, at these residential buildings, the maximum noise levels predicted to be generated by on-site construction activities at building 3F would be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria during certain portions of the construction period. During other portions of the building 3F construction period, noise levels at these residences resulting from construction would range from the mid 60s to high 70s. Noise levels in the high 70s dBA, as would be experienced at this location resulting from on-site construction activities other than rock excavation and/or pile driving at building 3F, are comparable to existing noise levels measured in this neighborhood along active roadways, and are typical for noise levels in many areas of the Bronx. These receptors are discussed further in the *Duration of Construction Noise from On-Site Sources* section below.

East 179th Street South Side Residences

The residences along the south side of East 179th Street east of Vyse Avenue on Block 3131 are located adjacent to buildings 3D, 3E, and 3F. Measured existing noise levels near these locations were in the mid to high 60s dBA and would be expected to remain relatively unchanged in the future without the proposed project. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels would be in approximately the low 70s dBA during the loudest periods of demolition, excavation, and foundation work at buildings 3D, 3E, and 3F. Consequently, at these residential buildings, the maximum noise levels predicted to be generated by on-site construction activities at buildings 3D, 3E, and 3F would be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria during certain portions of the construction period. However, noise levels in the low 70s dBA, as would be experienced at this location resulting from on-site construction activities at buildings 3D, 3E, and 3F, are comparable to existing noise levels measured in this neighborhood, and are typical for noise

levels in many areas of the Bronx. These receptors are discussed further in the *Duration of Construction Noise from On-Site Sources* section below.

2064 Boston Road

The residential building at 2064 Boston Road is located adjacent to Parcel 3, Parcel 5, and Parcel 10. Measured existing noise levels near this location were in the low 80s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels would be approximately in the mid 70s during construction on the proposed building 5A and 5B construction sites. Consequently, at this location, noise generated by on-site construction activities would not be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria. This receptor is not discussed further.

Bronx Park

Bronx Park is located adjacent to Parcel 1, Parcel 3, and Parcel 5. Measured existing noise levels near this open space were in the low 70s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels would be approximately in the high 60s during construction on Parcel 1, Parcel 3, and Parcel 5. Consequently, at this open space receptor, noise generated by on-site construction activities would not be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria. This receptor is not discussed further.

West Farms Rapids Park

The future West Farms Rapids Park will be located immediately adjacent to Parcel 5 and Parcel 10. Measured existing noise levels near this location were in the low 80s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels would be approximately in the mid 80s dBA during the loudest periods of demolition, excavation, and foundation work at building 5B and approximately in the mid 70s dBA during the loudest periods of demolition, excavation, and foundation work at the Parcel 10 school. Consequently, at this open space, the maximum noise levels predicted to be generated by on-site construction activities at building 5B would be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria during certain portions of the construction period. This receptor is discussed further in the *Duration of Construction Noise from On-Site Sources* section below.

Blocks 3136 and 3130

The school on Block 3136 and residences on Block 3130 are located directly across Boston Road from Parcel 10. Measured existing noise levels near this location were in the low 80s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels would be approximately in the low 70s dBA during the loudest periods of demolition, excavation, and foundation work on Parcel 10. Consequently, at these receptors, noise generated by on-site construction activities would not be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria. These receptors are not discussed further.

Summary of Noise Level Increments

Excepting the residences along East 179th Street on Block 3132 within approximately 50 feet of the building 3F construction site, noise receptors in the study area are predicted to experience a

maximum increase in noise levels of approximately 8 dBA, which is typical of high-rise building construction in New York City. Furthermore, maximum total noise levels due to construction that would occur at these receptors would be in the low to mid 70s dBA, which is comparable to existing noise levels measured in this neighborhood along active roadways, and is typical for noise levels in many areas of the Bronx.

At the residences on Block 3132 that are located immediately west of the building 3F construction site, on-site construction activity would be expected to result in noise level increases up to 18 dBA during the loudest portions of the construction period at building 3F, including rock excavation and/or pile driving to the extent that these activities would be needed. This is due to the very short distance between the existing residences and the proposed construction site and due to the relatively low existing noise levels at these residences. Such noise level increases are not uncommon for infill construction on an already occupied block in New York City.

Based on the noise level increments, a consideration of the duration of the noise level increases is warranted for the following receptors: Bronx Park South and East 181st Street Residences, New Tabernacle Baptist Church, East 179th North Side Residences, East 179th South Side Residences, and West Farms Rapids Park.

DURATION OF CONSTRUCTION NOISE FROM ON-SITE SOURCES

The noisiest construction activities at each building site would the demolition, excavation, and foundation work, which is expected to last a combined six months for each building group (see Table 18A-2). The dominant noise sources would include hydraulic break ram, pile driver, excavator, jackhammer, etc. The maximum noise levels described above would occur when dominant noise equipment, such as hydraulic break rams or hydraulic pile drivers, are used. The use of such equipment is anticipated to occur over approximately 3 to 6 months but would not occur continuously throughout the demolition and foundation stages of work. During times when these dominant pieces of equipment would not be operating, construction noise levels would be lower. Noise levels from construction activities typically fluctuate throughout the day and from day to day, and would not be sustained at the maximum noise levels during the entire 6 months of demolition, excavation, and foundation activities for each building group.

Bronx Park South and East 181st Street Residences

As described above, at various times during the construction of buildings 1A and 1B, the Bronx Park South and East 181st Street residences would experience exceedances of the *CEQR Technical Manual* noise impact criteria resulting from on-site construction noise. The maximum construction noise levels, expected to be in the mid 70s dBA, would occur during the approximately six months of demolition and excavation work at buildings 1A and 1B. During the approximately nine months of superstructure work and approximately nine months of interior fit-out work at buildings 1A and 1B, these receptors would be expected to experience construction noise levels in approximately the high 60s to low 70s dBA. Construction at other buildings associated with the proposed project would occur at distances of 200 feet or greater, and would consequently produce levels of construction noise that would not result in exceedances of the *CEQR Technical Manual* noise impact criteria at these receptors. The total consecutive duration of predicted exceedances of the *CEQR Technical Manual* noise impact criteria at these receptors resulting from construction at buildings 1A and 1B would be 24 months.

According to field observations, all of these residences appear to have double-glazed windows, and many of these residences appear to have a means of alternate ventilation in the form of through-wall air conditioners or window air conditioners. Residential units with double-glazed windows and an alternate means of ventilation would be expected to achieve between 25 and 30 dBA of attenuation resulting in interior $L_{10(1)}$ values less than 45 dBA during much of the construction period, which would be considered acceptable according to CEQR criteria. At residential units that do not have an alternate means of ventilation, the typical attenuation would be 5 dBA for an open window condition. This level of attenuation would not be expected to result in interior noise levels during most of the time that are below 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria).

Since the magnitude of the noise levels predicted to occur at these residences is comparable to measured existing noise levels in the neighborhood, the duration of the elevated noise levels due to construction would be limited to a relatively short time, and most of the residences have double-glazed windows and through-wall air conditioners or window air conditioners, there are only a limited number of residences and a relatively short period of time that noise exposure within these residences would have the potential to exceed the CEQR acceptable interior noise level criteria for residential use. Consequently, the predicted noise level increases at these residences due to construction, while they would be noticeable, would not rise to the level of significant adverse construction noise impacts.

New Tabernacle Baptist Church

As described above, at various times during the construction of buildings 1A, 1B, 1C, and 1D, the New Tabernacle Baptist Church would experience exceedances of the *CEQR Technical Manual* noise impact criteria resulting from on-site construction noise. The maximum construction noise levels, expected to be in the mid 70s dBA, would occur during the approximately six months of demolition and excavation work at buildings 1B and 1D. During the approximately nine months of superstructure work and approximately nine months of interior fit-out work at buildings 1A, 1B, 1C, and 1D, this receptor would be expected to experience construction noise levels in approximately the high 60s to low 70s dBA. Construction at other buildings associated with the proposed project would occur at distances of 200 feet or greater, and would consequently produce levels of construction noise that would not result in exceedances of the *CEQR Technical Manual* noise impact criteria at this receptor. The total duration of predicted exceedances of the *CEQR Technical Manual* noise impact criteria at this receptor resulting from construction at buildings 1A, 1B, 1C, and 1D would be 24 consecutive months.

According to field observations, the Church does not appear to have double-glazed windows, and the presence of an alternate means of ventilation cannot be confirmed. Typical attenuation provided by single-glazed windows would range from 5 dBA for an open window condition (i.e., no alternate means of ventilation) to 20 dBA (i.e., with an alternate means of ventilation/closed-window condition). These levels of attenuation would not be expected to result in interior noise levels that are below 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria). However, according to the New Tabernacle Baptist Church website,[6] services (classes and worship) are held on Sundays at 9:30 AM and 11 AM and on Wednesdays at 7 PM, which are outside the hours of project construction.

[6] http://www.faithstreet.com/church/new-tabernacle-baptist-church, accessed December 14, 2015.

Since the magnitude of the noise levels predicted to occur at the Church is comparable to measured existing noise levels in the neighborhood, the duration of the elevated noise levels due to construction would be limited to a relatively short time, and most of the Church's services apparently occur outside the construction work hours, the amount of time, if any, that users of the Church would experience elevated levels of construction noise would be very limited. Consequently, the predicted noise level increases at the Church due to construction, while they would be noticeable, would not rise to the level of significant adverse construction noise impacts.

East 179th Street North Side Residences

As described above, at various times during the construction of building 3F, the East 179th Street residences would experience exceedances of the *CEQR Technical Manual* noise impact criteria. The maximum construction noise levels, expected to be in the mid 80s dBA, would occur during rock excavation and/or pile driving work at building 3F, to the extent that these activities will be necessary at building 3F. While the exact geotechnical conditions within the Development Site have not been determined, rock excavation and pile driving for the entire project (including all buildings) is expected to last approximately a combined 12 to 14 weeks, with rock excavation and/or pile driving occurring on any particular building site for a substantially shorter time, likely a month or less. During the approximately nine months of superstructure work and approximately nine months of interior fit-out work at building 3F, these receptors would be expected to experience construction noise levels in approximately the low to high 70s dBA. Construction at other buildings associated with the proposed project would occur at distances of 200 feet or greater, and would consequently produce levels of construction noise that would not result in exceedances of the *CEQR Technical Manual* noise impact criteria at these receptors. The total consecutive duration of predicted exceedances of the *CEQR Technical Manual* noise impact criteria at these receptors resulting from construction at building 3F would be 24 months.

According to field observations, all of these residences appear to have double-glazed windows, and many of these residences appear to have a means of alternate ventilation in the form of window air conditioners. Residential units with double-glazed windows and an alternate means of ventilation would be expected to achieve between 25 and 30 dBA of attenuation resulting in interior $L_{10(1)}$ values less than 45 dBA during much of the construction period, which would be considered acceptable according to CEQR criteria. At residential units that do not have an alternate means of ventilation, the typical attenuation would be 5 dBA for an open window condition. This level of attenuation would not be expected to result in interior noise levels during most of the time that are below 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria).

Since the loudest construction activities at these residences would be limited to approximately one month, and the magnitude of the noise levels predicted to occur at these residences during other construction activities is comparable to measured existing noise levels in the neighborhood, and most of the residences have double-glazed windows and through-wall air conditioners or window air conditioners, the predicted noise level increases at these residences due to construction, while they would be noticeable, would not rise to the level of significant adverse construction noise impacts.

East 179th Street South Side Residences

As described above, at various times during the construction of building 3B, 3C, 3D, 3E, and 3F, the East 179th Street South Side residences would experience exceedances of the *CEQR*

Technical Manual. The maximum construction noise levels, expected to be in the low 70s dBA, would occur during the approximately six months of demolition and excavation work at buildings 3D, 3E, and 3F. During the approximately nine months of superstructure work at buildings 3B, 3C, 3D, 3E, and 3F, these receptors would be expected to experience construction noise levels in approximately the high 60s dBA. During the approximately nine months of interior fit-out work at buildings 3B, 3C, 3D, 3E, and 3F, these receptors would be expected to experience construction noise levels in approximately the mid 60s dBA, which would not result in exceedances of the *CEQR Technical Manual* noise impact criteria. Construction at other buildings associated with the proposed project would occur at distances of 200 feet or greater, and would consequently produce levels of construction noise that would not result in exceedances of the *CEQR Technical Manual* noise impact criteria at these receptors. The total consecutive duration of predicted exceedances of the *CEQR Technical Manual* noise impact criteria at these receptors resulting from construction at buildings 3B, 3C, 3D, 3E, and 3F would be 15 months.

According to field observations, all of these residences appear to have double-glazed windows, and many of these residences appear to have a means of alternate ventilation in the form of through-wall air conditioners or window air conditioners. Residential units with double-glazed windows and an alternate means of ventilation would be expected to achieve between 25 and 30 dBA of attenuation resulting in interior $L_{10(1)}$ values less than 45 dBA during much of the construction period, which would be considered acceptable according to CEQR criteria. At residential units that do not have an alternate means of ventilation, the typical attenuation would be 5 dBA for an open window condition. This level of attenuation would not be expected to result in interior noise levels during most of the time that are below 45 dBA $L_{10(1)}$ (the CEQR acceptable interior noise level criteria).

Since the magnitude of the noise levels predicted to occur at these residences is comparable to measured existing noise levels in the neighborhood, the duration of the elevated noise levels due to construction would be limited to a relatively short time, and most of the residences have double-glazed windows and through-wall air conditioners or window air conditioners, there are only a limited number of residences and a relatively short period of time that noise exposure within these residences would have the potential to exceed the CEQR acceptable interior noise level criteria for residential use. Consequently, the predicted noise level increases at these residences due to construction, while they would be noticeable, would not rise to the level of significant adverse construction noise impacts.

West Farms Rapids Park

As described above, at various times during the construction of building 5B, West Farms Rapids Park would experience exceedances of the *CEQR Technical Manual*. The maximum construction noise levels, expected to be in the mid 80s dBA, would occur during rock excavation and/or pile driving work at building 5B, to the extent that these activities will be necessary at building 5B. While the exact geotechnical conditions within the Development Site have not been determined, rock excavation and pile driving for the entire project (including all buildings) is expected to last approximately a combined 12 to 14 weeks, with rock excavation and/or pile driving occurring on any particular building site for a substantially shorter time, likely a month or less. During the approximately nine months of superstructure work at building 5B, this receptor would be expected to experience construction noise levels in approximately the low 80s dBA. During the approximately nine months of interior fit-out work at building 5B, this receptor would be expected to experience construction noise levels in approximately the high 70s dBA, which would not result in exceedances of the *CEQR Technical Manual* noise impact

criteria. Construction on Parcel 10 would result in maximum noise levels in the mid 70s dBA or lower, which would not result in exceedances of the *CEQR Technical Manual* noise impact criteria. Construction at other buildings associated with the proposed project would occur at distances of 200 feet or greater, and would consequently produce levels of construction noise that would not result in exceedances of the *CEQR Technical Manual* noise impact criteria at this receptor. The total consecutive duration of predicted exceedances of the *CEQR Technical Manual* noise impact criteria at this receptor resulting from construction at building 5B would be 15 months.

Since the loudest construction activities at the park would be limited to approximately one month, and the magnitude of the noise levels predicted to occur at the park during other construction activities is comparable to measured existing noise levels at the park, the predicted noise level increases at the park due to construction, while they would be noticeable, would not rise to the level of significant adverse construction noise impacts.

PROJECT-RELATED SENSITIVE RECEPTORS

Proposed project buildings that would be completed and occupied before construction is completed at other project buildings (e.g., building 3A would be complete and occupied while construction is underway at the remainder of project buildings) would also experience elevated exterior noise levels due to construction activities. The closest distance between a completed and occupied project building and a project building under construction would be approximately 40 feet. At this distance, completed and occupied project buildings may experience construction noise levels from other project buildings in the mid 70s dBA. Based on the building attenuation analysis shown in Chapter 15, "Noise," buildings on parcels 3, 5, and 10 as well as building 1D would all be required to provide 27-39 dBA façade attenuation as well as an alternate means of ventilation. This level of attenuation would be expected to result in interior $L_{10(1)}$ values less than 45 dBA during much of the construction period, which would be considered acceptable according to CEQR criteria. At buildings 1A, 1B, and 1C, the minimum required level of building attenuation would be 22 dBA; however, typical façade construction practices in New York City usually result in 25-30 dBA façade attenuation. These buildings would also provide an alternate means of ventilation (i.e., air conditioning), which would be expected to result in interior $L_{10(1)}$ values less than 45 dBA during much of the construction period, which would be considered acceptable according to CEQR criteria. Therefore, no significant adverse construction noise impacts are projected to occur at the project buildings.

Chapter 18E: Construction—Other Technical Areas Impact Assessment

T. VIBRATION

For purposes of assessing potential structural or architectural damage, the determination of a significant impact was based on the vibration impact criterion used by the New York City Landmarks Preservation Commission (LPC) of a peak particle velocity (PPV) of 0.50 inches/second. For non-fragile buildings, vibration levels below 0.60 inches/second would not be expected to result in any structural or architectural damage. For purposes of evaluating potential annoyance or interference with vibration-sensitive activities, vibration levels greater than 65 vibration decibels (VdB) would have the potential to result in significant adverse impacts if they were to occur for a prolonged period of time.

The buildings and structures of most concern with regard to the potential for structural or architectural damage due to vibration are the four historic resources located within 90 feet of the Development Site: Old West Farms Soldier Cemetery, Beck Memorial Presbyterian Church, New Tabernacle Baptist Church, and Peabody Home for Aged and Indigent Women. To avoid inadvertent demolition and/or construction-related damage to these resources from ground-borne construction-period vibrations, falling debris, collapse, etc., these resources would be included in a Construction Protection Plan (CPP) for historic structures that would be prepared in coordination with the New York State Historic Preservation Officer (SHPO) and LPC and implemented in consultation with a licensed professional engineer. The CPP would include a monitoring component to ensure that if vibration levels approach the 0.5 inches per second peak particle velocity (PPV) criterion, corrective action would be taken to reduce vibration levels, thereby avoiding architectural damage and significant vibration impacts. Therefore, construction of the proposed project is not expected to result in significant adverse construction impacts with respect to vibration.

In terms of potential vibration levels that would be perceptible and annoying, the equipment that would have the most potential for producing levels which exceed the 65 VdB limit is the pile driver. It would produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at nearby receptor locations. However, the operation would only occur for limited periods of time at a particular location and therefore, while it may result in vibration that is noticeable and perhaps annoying, it would not result in any significant adverse impacts. In no case are significant adverse impacts from vibrations expected to occur.

U. LAND USE AND NEIGHBORHOOD CHARACTER

Construction activities would affect land use on the Development Site but would not alter surrounding land uses. No portion of the Development Site would be subject to the full effects of the construction for the entire construction period. Construction activities on all parcels would adhere to the provisions of the New York City Building Code and other applicable regulations. As is typical with construction projects, during periods of peak construction activity there would be some disruption to the nearby area. There would be construction trucks and construction

workers coming to the Development Site. There would also be noise, sometimes intrusive, from demolition, excavation, and foundation activities as well as trucks and other vehicles backing up, loading, and unloading. These disruptions would be temporary in nature and would have limited effects on land uses within the study area, particularly as most construction activities would take place within a single parcel within the Development Site at any one time. In addition, throughout the construction period, measures would be implemented to control noise, vibration, and dust on the Development Site, including the erection of construction fencing and barriers. The fencing would reduce potentially undesirable views of construction site and buffer noise emitted from construction activities. Barriers would be used to protect the safety of pedestrians and to reduce noise from particularly disruptive activities where practicable.

Overall, while the construction at the various building sites within the Development Site would be evident to the local community, the limited duration of construction at each parcel would not result in significant or long-term adverse impacts on local land use patterns or the character of the nearby area.

V. SOCIOECONOMIC CONDITIONS

Construction of the proposed project would not result in any significant adverse impacts on socioeconomic conditions. Construction activities would not block or restrict access to any facilities in the area, affect the operations of any nearby businesses, or obstruct major thoroughfares used by customers or businesses. Construction would create direct benefits resulting from expenditures on labor, materials, and services, and indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the construction activity. Construction also would contribute to increased tax revenues for the City and State, including those from personal income taxes.

W. COMMUNITY FACILITIES

While construction of the proposed project would result in temporary increases in traffic during the construction period, access to and from any community facilities in the area (i.e., Phipps Community Education Center, Bronx River Art Center, and New Tabernacle Baptist Church, etc.) would not be blocked or restricted during the construction period. Construction workers would have minimal, if any, demands on libraries, child-care facilities, and health care. Construction of the proposed project would not block or restrict access to any facilities in the area, and would not materially affect emergency response times as a result of the geographic distribution of the police and fire facilities and their respective coverage areas.

X. OPEN SPACE

There are no publicly accessible open spaces within the Development Site and no open space resources would be used for staging or other construction activities. The nearest open space resources are the River Park located across Bronx Park South/Boston Road to the northeast of the Development Site, Krystal Community Garden located across the Bronx River to the east of the Development Site, and the future West Farms Rapids Park, the greenway segment to be developed adjacent to Parcels 5 and 10. At limited times, activities such as demolition, excavation, and foundation construction may generate noise that could impair the enjoyment of nearby open space users, but such noise effects would be temporary. Further, construction of the proposed project would follow the requirements of the *New York City Noise Control Code* for

construction noise control measures to minimize noise disruption to the nearby community. Construction activities would be conducted with the care mandated by the close proximity of an open space to the Development Site. Dust control measures—including watering of exposed areas and dust covers for trucks—would be implemented to ensure compliance with the New York City Air Pollution Control Code, which regulates construction-related dust emissions. Furthermore, construction of the proposed project would not limit access to any open space resources in the vicinity of the Development Site. Therefore, the proposed project would not result in significant adverse impacts on open space during construction.

Y. HISTORIC AND CULTURAL RESOURCES

Historic and cultural resources include both archaeological and architectural resources. Chapter 7, "Historic and Cultural Resources," provides a detailed assessment of potential impacts on archaeological and architectural resources. This section summarizes potential impacts during construction.

As detailed in Chapter 7, "Historic and Cultural Resources," LPC has determined that the Development Site has no archaeological significance. In a letter dated March 17, 2016, SHPO noted it had reviewed the DEIS analysis. No archaeological concerns were raised.

There are four historic resources located within 90 feet of the Development Site: Old West Farms Soldier Cemetery, Beck Memorial Presbyterian Church, New Tabernacle Baptist Church, and Peabody Home for Aged and Indigent Women. As noted above, to avoid inadvertent demolition and/or construction-related damage to these resources from ground-borne construction-period vibrations, falling debris, collapse, etc., these buildings would be included in a CPP for historic structures that would be prepared in coordination with SHPO and LPC and implemented in consultation with a licensed professional engineer. The CPP would be prepared as set forth in Section 523 of the *CEQR Technical Manual* and in compliance with the procedures included in the DOB's TPPN #10/88 and LPC's *Guidelines for Construction Adjacent to a Historic Landmark* and *Protection Programs for Landmark Buildings*. Provisions of the 2014 New York City Building Code also provide protection measures for all properties against accidental damage from adjacent construction by requiring that all buildings, lots, and service facilities adjacent to foundation and earthwork areas be protected and supported. Further, Building Code Chapter 3309.4.4 requires that "historic structures that are contiguous to or within a lateral distance of 90 feet…from the edge of the lot where an excavation is occurring" be monitored during the course of excavation work. The CPP would be prepared and implemented prior to demolition and construction activities on the Development Site and project-related demolition and construction activities would be monitored as specified in the CPP.

Overall, no significant adverse impacts on historic and cultural resources are anticipated as a result of the construction of the proposed project.

Z. HAZARDOUS MATERIALS

Former uses within (or near) Development Site may have impacted subsurface conditions; and the existing residential and/or former commercial spaces may have used and stored oil for heating purposes and the structures may contain ACM, LBP, and/or PCB-containing materials. Demolition of the existing structures and excavation activities associated with new construction could disturb these hazardous materials and potentially increase pathways for human or environmental exposure. As described in more detail in Chapter 10, "Hazardous Materials,"

impacts would be avoided through the mapping of "E" designations for hazardous materials on each parcel and implementing a series of measures that would address the potential for contamination at the Development Site. With these measures, construction of the proposed project would not result in any significant adverse impacts related to hazardous materials.

AA. NATURAL RESOURCES

The construction activities associated with the proposed project would not cause any significant adverse environmental impacts on natural resources, as discussed in greater detail in Chapter 9, "Natural Resources." This section summarizes potential impacts during construction.

GROUNDWATER

Groundwater in the Bronx is not used as a potable water supply. Therefore, construction of the proposed project would not have significant adverse impacts to groundwater within the Development Site or study area.

FLOODPLAINS

Construction of the proposed project would not significantly alter the floodplain or result in additional flooding to adjacent properties and would therefore not have significant adverse impacts to floodplains within the Development Site or study area.

WETLANDS

There are no National Wetland Inventory (NWI)- or NYSDEC-mapped wetlands, or NYSDEC-regulated wetland adjacent areas within the Development Site. Therefore, construction of the proposed project would not have significant adverse impacts to wetlands or NYSDEC-regulated wetland adjacent areas.

AQUATIC RESOURCES

As part of the proposed project, coverage under a NYSDEC State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001) would be required due to soil disturbance of greater than 1 acre. In accordance with NYSDEC SPDES (GP-0-10-001), a SWPPP consisting of both temporary erosion and sediment controls and post-construction stormwater management practices would be prepared. Therefore, construction of the proposed project would not have significant adverse impacts to aquatic resources.

TERRESTRIAL RESOURCES

Construction of the proposed project would result in the removal of street trees and trees planted within building courtyards within the Development Site. However, all work would be performed in compliance with Local Law 3 of 2010 and the City of New York Department of Parks and Recreation's (DPR) Tree Protection Protocol, to minimize potential significant adverse impacts. Any required replacement and/or restitution would be provided in compliance with Local Law 3 and Chapter 5 of Title 56 of the Rules of the City of New York. Therefore, construction of the proposed project would not have significant adverse impacts to vegetation and ecological communities.

Construction activities would not eliminate any high quality or valuable habitat for wildlife, and would not adversely affect wildlife within the area.

THREATENED, ENDANGERED, AND SPECIAL CONCERN SPECIES

The federal- or state-listed endangered, threatened, and special concern species, or significant natural communities that are considered to have the potential to occur or are known to occur within the Development Site or study area include yellow giant-hyssop and willow oak.

Yellow giant-hyssop does not have potential to occur within the Development Site, and is not very likely to occur within the study area. Therefore, construction activities would be unlikely to occur within habitat potentially associated with this species. Thus construction of the proposed project would not have direct or indirect impacts to yellow giant-hyssop at either the individual or population level.

Willow oaks were observed on Parcel 3 and Parcel 5 during the June 19, 2015 reconnaissance investigation. These nine trees would be removed as a result of the project. All nine willow oaks located within the Development Site were planted within the building courtyards and do not represent natural populations. Because willow oak is a commonly planted tree in New York City (Peper et al. 2007), these trees do not constitute one of the "five or fewer sites or very few remaining individuals" of this species in New York State as is intended by the New York Natural Heritage Program (NYNHP) "S1" rank. Therefore the removal of these trees would not be considered significant adverse impacts to protected willow oak populations. As discussed in Chapter 9, "Natural Resources," willow oaks would be considered in the landscaping plans to the extent that the construction schedule allows based on the required planting seasons.

Therefore, construction of the proposed project would not have significant adverse impacts to threatened, endangered, and special concern species and significant natural communities. ✷